

- j) thus reducing in the vertical movement of said crank assembly as the suspension is moved from the uncompressed to compressed position.
- 18) (New) The bicycle rear wheel suspension of claim 15 wherein there are additional links that operate in parallel to either said first link or said second link.
- 19) (New) The bicycle rear wheel suspension of claim 15 wherein when the swingarm is in the uncompressed position, first and second links are positioned so that the link centerlines intersect at a location that is horizontally located between 25 to 150 millimeters (1 to 6 inches) forward of the crank assembly center.
- 20) (New) The bicycle rear wheel suspension of claim 15 wherein when the swingarm is compressed, first and second links are repositioned so that the link centerlines now intersect at a location that is horizontally located between 25 millimeters (1 inch) in front of the crank assembly center and 50 millimeters (2 inches) rearward of the crank assembly center.

Remarks – General

1. The objection to the drawings has been noted: new drawing figures 1 and 10 are attached. The new figures eliminate the multiple element numbers for a single component.
2. The claims of record have all been rewritten and replaced with new claims 11 to 20 in order to correct the informalities as pointed out in the FOA.

The Claims All Distinguish Over the References Under Sec. 102

3. The independent claims 11 and 17, and hence all claims, distinguish over the references under section 102 because they recite " the instant center of rotation is horizontally located forward of the crank assembly center when the swingarm is uncompressed and moves significantly rearward as the suspension is compressed." None of the prior art references have this feature.
4. The cited and relied upon Harris patent shows a swingarm that has a moving instant center of rotation. However, the movement of the instant center of rotation is significantly forward (and upward). Please see the attached drawing figures where notes have been added to the figures 6 and 7 from the Harris patent. In the notes that are added to the Harris' figure 7, the locations of the instant center of rotation are in error because the point P5 is assumed to be a pivot location.

Instead, the point P3 is the upper pivot location. In the figure 6 by Harris the point P5 is shown to be a shock attachment point. The pivot points are also defined in Harris' specification where he states that "...and a second end thereof is connected to frame F near a lower end thereof at P1, P3." P3 is clearly the pivot location and not P5.

5. Furthermore, Harris describes his invention as "For pivotally connecting the swing arm SA to the frame F of the bicycle near a second end thereof, a pair of upwardly converging links L1, L2." The key distinction is the phrase "upwardly converging". That means that his instant center of rotation is above the links. Because the instant center of rotation is above the links and the links both rotate in the same direction as the swing arm, his instant center of rotation must have forward movement. Thus the Harris patent is distinctly different, if not opposite to the applicant's claims 1 – 10. The Harris patent is focused on providing an upward and rearward linear wheel path, whereas the applicant's wheel path is a secondary consideration. The applicant's wheel path is a decreasing radius arc that is generally centered around the cranks.

6. Since the independent claims both recite features which are not present in any reference, applicant submits that these claims, and hence all dependent claims, clearly recite novel physical features which distinguish over any and all references under section 102.

Magazine Reviews Declare Invention Novel and Significant.

7. I have included two new magazine articles from mountain bike magazines that both review the suspension system as a novel invention of significant value. In fact, Mountain Biking magazine has declared the Haro VL120 (which uses the applicant's suspension system) Cross-Country Bike Of The Year 2006. From their article "With all the patents written these days protecting various suspension designs, it's rare when a company comes out with something entirely new."

The Novel Physical Features Of The Claims Provide New And Unexpected Results And Hence Should Be Considered Unobvious, Making The Claims Patentable Under Sec. 103

8. Applicant submits that the above-recited novel features in the independent claims, provide new and unexpected results and hence should be considered unobvious, making the claims patentable under Sec. 103.

9. Specifically, the use of an initially forward instant center of rotation (to minimize pedal induced bobbing) that moves rearward to reduce the vertical movement of the crank assembly as the suspension is compressed.

10. None of the prior art suspension systems can provide this new and unexpected result:

Harris has a moving instant center of rotation, however it moves forward from behind the crank assembly to a position that is significantly in front of the crank assembly. This system does not minimize the pedal induced bobbing. Additionally, the vertical movement of the crank assembly is not decreased as the suspension is compressed.

Additional Reasons That Militate In Favor Of Unobvious

11. **Crowded Art:** The present invention is in a crowded art. It is well recognized that in a crowded art, even a small step forward is worthy of patent protection. While the present invention is submitted to be far more than a small one, nevertheless this factor militates in applicant's favor.

The Dependent Claims are A-fortiori Patentable

12. The dependent claims add additional novel features and thus are submitted to be, a-fortiori, patentable. The dependent claims all specifically recite physical structure to the independent claims 11 and 17.

Very respectfully,

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Date: 4/25/06

Inventor's Signature: Nem T Su